

**1 - IDENTIFICATION OF THE PREPARATION AND THE COMPANY/BUSINESS****Identification of the substance or preparation**

Name of product: **A4000 CLEAR, Red, White & Violet**  
**A4000 CLEAR BOS & BBS, A4000 RED BOS**

**Use of the substance / preparation**

Article: Release Film

**Company / undertaking identification**

Company name: AIRTECH EUROPE Sarl  
Street/POB No.: Z.I. Haneboesch  
State/city/postal code: L-4562 DIFFERDANGE  
Telephone: +352-582282-1  
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E-mail: sales@airtech.lu

**Emergency telephone** +352-582282-1 (8.00am – 5.00pm CET)

**2 - HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW:** At elevated processing temperatures or if involved in a fire, the fluoropolymer starts to degrade and emit vapors which may represent a hazard when inhaled. Eye, nose, throat and lung irritation can occur from such vapors.

**3 – COMPOSITION/INFORMATION ON INGREDIENTS****Base material:**

Chemical name base resin	CAS #	Content
FEP Copolymer (Fluorinated Ethylene Propylene Copolymer)	25067-11-2	> 99%

**Colorants:****A4000 Red & Violet**

Chemical name	CAS-Number	EC-Number	Content
Inert pigments (heavy metal free)	Various	Various	< 1.0 %

**A4000 White**

Chemical name	CAS-Number	EC-Number	Content
Titanium dioxide	13463-67-7	236-675-5	< 0.1 %

**4 - FIRST AID MEASURES**

**Inhalation:** In case of accidental inhalation of fumes from overheating or combustion, move to fresh air. Consult a physician after significant exposure (see also section 11).

**Skin contact:** If molten polymer contacts skin, cool rapidly with cold water. Do not attempt to peel polymer from skin. Obtain medical attention for thermal burn.

**Eye contact:** Flush eyes with water for at least 15 minutes. Consult a physician if irritation persists.

**Ingestion:** No need for first aid is anticipated.

**5 - FIRE-FIGHTING MEASURES**

**Suitable extinguishing media:** Water, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons:** High power water jet.

**Unusual fire and explosion hazards:** The solid polymer can only be burned with difficulty.

**Special protective equipment:** In the event of fire, wear an approved positive pressure self-contained breathing apparatus and full protective clothing. Does not burn without an external flame. Wear neoprene gloves when handling refuse from a fire.

**6 - MEASURES TO BE TAKEN IN THE EVENT OF ACCIDENTAL SPILLAGE**

**Environmental precautions:** Do not allow to enter ground water, sewage or drains.

**Methods for clean-up:** Collect and store into containers for disposal.

**7 - HANDLING AND STORAGE**

**Handling:** Good industrial practice for handling of chemical products should be followed. Provide adequate ventilation, and local exhaust as needed.

**Storage:** Store in a cool, dry area, away from direct sunlight, at 20-25°C and 50-55% relative humidity. Keep original packaging tightly closed until use to prevent moisture absorption and contamination.

**8 - EXPOSURE CONTROLS/ PERSONAL PROTECTION****Exposure limit values:**

<b>Exposure limits for Titanium dioxide</b>		CAS: 13463-67-7
ACGIH	TLV-TWA = 10 mg/m <sup>3</sup> , total dust, 8 Hr.	
France (INRS)	VME = 10 mg/m <sup>3</sup>	
<b>Exposure limits for hydrogen fluoride</b> (as a degradation product, percentage< 1)		CAS: 7664-39-3
ACGIH	TLV-TWA = 3 ppm (as F, Ceiling) = 2.5 mg/m <sup>3</sup>	
France (INRS)	VLE = 3 ppm = 2.5 mg/m <sup>3</sup>	
Germany (TRGS 900)	MAK = 3 ppm = 2.5 mg/m <sup>3</sup> MAK (STEL) = 6 ppm = 5 mg/m <sup>3</sup>	
2000/39/EC	VME = 1.5 ppm = 1.8 mg/m <sup>3</sup> VLE = 2.5 ppm = 3 mg/m <sup>3</sup>	
<b>Exposure limits for carbonyl fluoride</b> (as a degradation product, percentage< 1)		CAS: 353-50-4
ACGIH	TLV-TWA = 2 ppm TLV-STEL = 5 ppm	
RTECS, 25044	LC50/inhalation/1h/rat = 360 ml/m <sup>3</sup>	
France (INRS)	VME = 2 ppm = 5 mg/m <sup>3</sup>	
<b>Exposure limits for perfluoroisobutylene</b> (as a degradation product, percentage< 0.01)		CAS: 382-21-8
ACGIH	TLV-TWA = 0.01 ppm (ceiling) = 0.083 mg/m <sup>3</sup>	

**Exposure controls:** Overall room ventilation and/or local exhaust at points of fume generation to maintain levels of vapors released during hot processing below the TLV exposure limits.

**Occupational exposure controls:**

Respiratory protection: None under normal usage if local exhaust ventilation is adequate. At processing temperatures above 260°C but less than 380°C, an air purifying respirator with dust/mist cartridge or canister may provide protection from airborne particulates which cause polymer fume fever. At processing temperatures above 380°C, or when exposure levels are not known, use a positive pressure air supplied respirator. Avoid inhalation of fumes.

Hand protection: Protective gloves according to EN 407 are required when handling hot material.  
Glove material: nitrile rubber

Eye protection: Use tightly sealed safety glasses according to EN 166.

Hygiene measures: Wash hands before handling food and at the end of work. Smokers should avoid contamination of tobacco products, and should wash their hands before smoking.

### 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, red, white or violet film
Odor:	None
pH:	Not applicable
Vapor pressure:	Not applicable
Solubility in water:	Insoluble.
Flash point:	Not applicable
Decomposition temperature:	> 275°C
Auto-ignition temperature (ASTM D 1929):	> 500°C
Melting point/range:	260-280 °C
Specific gravity:	2.1 – 2.2

### 10 – STABILITY AND REACTIVITY

**Conditions to avoid:** Heating above 260° C without adequate ventilation.

**Materials to avoid:** Can react with finely divided metal powders (e.g., aluminium and magnesium), alkali metals, strong oxidizing agents, halogenated compounds (e.g., chlorine trifluoride).

**Combustibility:** Difficult to ignite, and flame goes out when initiating source is removed (UL-94).

Limited Oxygen Index (ASTM D2863) > 95 %.

UL-94 Flammability rating: V-0

**Hazardous decomposition products:** Toxic vapors, gases or particulates, fluorinated olefins, hydrogen fluoride, carbonyl fluoride, perfluoroisobutylene may be evolved above 260°C.

**Additional information:** The product is stable at the handling and storage conditions recommended per § 7 of the safety data sheet and under normal processing conditions.

### 11 - TOXICOLOGICAL INFORMATION

**Inhalation:** The thermal decomposition vapors of fluorinated polymers from overheating or burning may cause irritation of the respiratory system and temporary lung irritation effects with cough, discomfort, difficulty breathing or shortness of breath, nose and throat pain. They may also cause polymer fume fever, a temporary flu-like illness with fever, chills and sometimes cough increased heart rate, nausea and headache. Symptoms usually appear after 2 hours and decline within the next 36 to 48 hours. Acute or chronic overexposure to vapors can injure the lungs, liver and kidneys. Individuals with preexisting diseases of the lungs may have increased susceptibility to the toxicity of excessive exposures from thermal decomposition products. Smokers should avoid contamination of tobacco products, and should wash their hands before smoking.

**Skin contact:** The thermal decomposition vapors may cause skin irritation. Signs/symptoms may include abrasion, redness and itching. Thermal burns may cause intense pain, redness and swelling, tissue destruction.

**Eye contact:** Vapors from heated material may cause severe eye irritation with redness, swelling, tearing, hazy vision and conjunctivae. Thermal burns may cause severe pain, redness and swelling, tissue destruction.

**Ingestion:** No adverse health effects are expected from swallowing this material.

### 12 - ECOLOGICAL INFORMATION

**Ecotoxicity:** Aquatic toxicity is expected to be low based on insolubility in water.

**Persistence and degradability:** Product is not biodegradable. The insoluble part can be disposed of mechanically in suitable waste water cleaning plants.

**Additional ecological information:** Do not allow to enter ground water, sewage or drains.

### 13 - DISPOSAL CONSIDERATIONS

**Disposal recommendations:** Like most thermoplastics, the product can be recycled. Where possible, recycling is preferred to landfill or incineration. Disposal of the product and the packaging must be done in compliance with local, state and federal regulations. Incineration must be done using a scrubber to remove hydrogen fluoride and other acidic combustion products, if in compliance with local regulations.

European waste key numbers: 070213 = Plastic waste

**Contaminated packaging:** Waste key number 150101 – Paper and cardboard packaging.

Waste key number 150102 – Plastic packaging.

### 14 - TRANSPORT INFORMATION

Not classified as hazardous under transport regulations (ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport).

### 15 - REGULATORY INFORMATION

**Classification:**

Code letter and hazard symbol: not applicable.

R phrase (s): not applicable.

S phrase (s): not applicable.

**National regulations – EC member states:**

Volatile organic compounds (VOC): 0% by weight.

**National regulations – USA:**

NFA Hazard rating:

Health: 0 (Minimal)

Fire: 0 (Minimal)

Reactivity: 0 (Minimal)

### 16 - OTHER INFORMATION

This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to use this information to develop appropriate work practice guidelines and employee instructional programs for your operation.

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